



PRACTICAL M-ARY DEMODULATOR AND METHOD OF  
OPERATION FOR USE IN A CDMA WIRELESS  
NETWORK BASE STATION

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ABSTRACT OF THE DISCLOSURE

A demodulator for demodulating S orthogonal modulation codes, each code comprising M binary bits representing an N-bit data symbol, where  $M = 2^N$ . The demodulator comprises a Logic 00 detector for comparing pairs of binary bits to 00 and outputting  $[+1, +1]$  if a match occurs or  $[-1, -1]$  otherwise; S accumulators; and a Logic 00 switch array comprising S switches, where a Kth switch couples an output of the Logic 00 detector to a first input of a Kth S accumulator. The demodulator also comprises a storage array for storing S code masks, each code mask comprising  $M/2$  code mask bits and each  $M/2$  code mask bit associated with a corresponding sequential pair of M binary bits; and control circuitry for synchronously applying the  $M/2$  code mask bits in a Kth code mask as a control signal to the Kth switch in the Logic 00 switch array.